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From: James R. Brueggemann Direct Dial: 213-617-4156

Re: Notice of Error in Application Publication

MESSAGE: Please see attached.

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I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office on May 24, 2004.

James R. Brueggemann

Notice of Error in Application Publication
Copy of Preliminary Amendment
Applicant: Russell E. Evans et al.
Title: POLARIZED EYEWEAR USING HIGH IMPACT, HIGH-QUALITY POLYMERIC MATERIAL
Serial No: 10/624,925 Filed: July 21, 2003
Examiner: Not yet assigned Group Art Unit: 2873
Our Docket No.: 07K8-105546 **Date Faxed: 05/24/04**
Client: Younger
Atty/Sec.: Brueggemann/Kemp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/624,925	Confirmation No. 6764
Applicants	:	Russell E. Evans et al.	
Filed	:	July 21, 2003	
TC/A.U.	:	2873	
Examiner	:	Not Yet Assigned	
Docket No.	:	07K8-105546	
Customer No.	:	30764	

May 24, 2004

NOTICE OF ERROR IN APPLICATION PUBLICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 23313-1450

Sir:

This application was published on January 29, 2004, as Publication No. US 2004/0017610 A1. The published application included publishing errors, because it failed to reflect certain amendments made to the specification and claims effected by a Preliminary Amendment filed with the original patent application, on July 21, 2003. A photocopy of the Preliminary Amendment is attached for the Examiner's convenient reference.

Applicants hereby notify the Examiner of this error in publication and respectfully request the Examiner to consider the Preliminary Amendment when the application is examined.

Respectfully submitted,

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

By: _____
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Enclosure

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	Not Assigned
Applicant:	Russell E. Evans et al.
Filed:	
Title:	POLARIZED EYEWEAR USING HIGH IMPACT, HIGH-QUALITY POLYMERIC MATERIAL
Group Art Unit:	Not assigned
Examiner:	Not assigned
Docket No.:	07K8-105546
Date:	July 21, 2003

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313

Dear Sir:

Please enter the following amendments prior to examination of the above-identified application.

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims that begins on page 9 of this paper.

Remarks begin on page 12 of this paper.

Amendments to the Specification:

Please change the Title of the Invention, on page 1, lines 1-2, to the following rewritten title:

METHOD OF MANUFACTURING OPTICAL-QUALITY POLARIZED PART INCORPORATING HIGH-IMPACT POLYURETHANE-BASED MATERIAL

Please replace the paragraph beginning on page 1, line 5, with the following rewritten paragraph:

This is a divisional of U.S. Patent Application Serial No. 09/804,785, filed March 13, 2001, which is hereby incorporated by reference as if fully set forth herein.

Please replace the paragraph beginning on page 4, lines 6-13, with the following rewritten paragraph:

Initial tests, however, ~~lead~~ led the inventors to believe that their modified high impact polymeric material could not be utilized to manufacture optical-quality polarized plastic parts. In early attempts to combine their modified high impact polymeric material with standard polyvinyl alcohol (PVA) polarized film using conventional techniques, the film was consistently displaced and bent out of shape during the introduction of the material. Thus, initial testing revealed that a substitution of their high impact material for standard lens thermoset resin materials and conventional manufacturing processes was not possible.

Please replace the paragraph beginning on page 11, lines 1-15, with the following rewritten paragraph:

Surprisingly, the inventors found that the rapid exothermic polymerization reaction of the present high impact polyurethane results in good adhesion to polarizer wafers. Typically used with thermoplastic parts, wafers comprise protective plastic layers on one or both sides of a polarizer film to increase the environmental durability and ease in handling of the polarizers. Three layer wafer constructs sandwich the polarizing film for protection and support on both surfaces. Two layer wafers (alternate material/polarizer film) may provide a supporting layer on one surface, or a single protective covering toward the outer surface of the optical part. Wafers, however, being thicker and usually laminated often do not conform to highly curved or non-symmetrically curved shapes and subsequently separate at the lamination interfaces due to stress fracturing. In addition, such wafers may require the much higher temperatures of thermoplastic processing in order to conform to such shapes, or to join reliably with the introduced lens materials. ~~Thermoplastic molding temperatures~~ Resin temperatures in thermoplastic molding are commonly in the range of 260-320°C rather than the 70-130°C used in thermoset resin casting. Due to the foregoing deficiencies, wafers are not commonly used with thermoset resins.

Please replace the paragraph beginning on page 12, lines 4-14, with the following rewritten paragraph:

With respect to materials of a freestanding polarizing film, these preferably include polyethylene terephthalate (PET) films, although PVA films may be used. PET polarizers, as disclosed in United States Patent ~~Application Serial No. 09/475,424~~ No. 6,220,703, which is ~~and~~ hereby incorporated by reference, are preferred because they are stable and exhibit low birefiringence, among other beneficial properties. Notwithstanding PET s potential advantages, the inherent inertness of PET should be overcome for the manufactured optical product to have adequate structural integrity. Thus, to effectively incorporate PET film as polarizer 104, methods to overcome PET s inertness for bonding should be employed. Such methods are fully disclosed in the above-identified patent application and United States Patent ~~Application Serial No. 09/567,711, which application~~ No. 6,413,641, which is hereby incorporated by reference.

Please replace the paragraph beginning on page 13, lines 19-21 and page 14, lines 1-9, with the following rewritten paragraph:

As illustrated in Fig. 3, the polarizer, such as polarizer 104, may be treated for improved adhesion at step "If desired, treat or condition polarizer for adhesion improvement." Previously reported treatments of polarizers, such as nitrocellulose coatings on CAB polarizer wafers (United States Patent No. 3,833,289) and polyvinyl butyral coating on polarizer sheets (United States Patent No. 4,090,830), did not prove reliable for ophthalmic lens processing. Therefore, the inventors investigated alternate coatings, as well as chemical and/or physical treatments of polarizer films, for improved adhesion. Details of surface treatments and chemistries for improved bonding are disclosed in United States ~~Application Serial Nos. 09/475,424 and 09/567,711~~ Patent Nos. 6,220,703 and 6,413,641, mentioned previously. Such treatments include mechanical roughening, physical cleaning, chemical surface modification, plasma activation, and coating of the polarizers.

Please replace the paragraph beginning on page 15, lines 11-16, with the following rewritten paragraph:

With the method illustrated in Fig. 3, the user may also advantageously be able to apply positive or negative pressure against the polarizer to conform it against the front surface before or during the admission of the liquid-phase polymeric material. Such pressure may be accomplished, for example, by using a gasket or cavity sealing mechanism such as that described in U.S. Patent ~~Application Serial No. 09/447,445, which application~~ No. 6,391,231, which is incorporated herein by reference as if fully set forth herein.

Please replace the paragraph beginning on page 17, lines 8-16, with the following rewritten paragraph:

Since this reactive polymeric material solidifies so quickly, the inventors, through their initial failures, recognized that conventional techniques that depend on solidification lasting several hours could not be used. In order for an acceptable optical-quality plastic part to be effected, the inventors turned to one of their earlier inventions. In particular, the inventors turned to their sidefill gasket technology disclosed in United States ~~Application Serial No. 09/447,445~~ Patent No. 6,391,231. Sidefill gaskets and methods as detailed therein incorporate extra vents to remove entrapped gases either by passive or active (e.g., vacuum) methods. A further refinement may include automation for reproducible and accurate filling.

Please replace the paragraph beginning on page 21, lines 18-21 and page 22, lines 1-11, with the following rewritten paragraph:

At step 22 "Position polarizer within optical part mold assembly," the polarizer is positioned and supported within the mold assembly such that liquid-phase polymer material may be introduced on both sides of the polarizer. This means that the polarizer is not resting against either of the outer molding surfaces. The inventors gasket assembly disclosed in United States ~~Application Serial No. 09/447,445~~ Patent No. 6,391,231 is a suitable gasket that may be used to support and securely position the polarizer within the thickness of such an assembly. Depending on the final use of the optical part, the polarizer may be positioned equidistantly from each outer molding surface, or nearer one surface than the other. For example, to form a semi-finished ophthalmic lens blank (commonly 6-15 mm total thickness), it is preferable to position the polarizer within 1.5 mm to 0.5 mm of the front molding surface. This ensures that the lens blank can be ground to prescription without cutting into the polarizer, even for lenses with a final center thickness of 2.2 to 1.8 mm. However, for display or non-prescription eyewear applications, it may be preferable to place the polarizer equidistant within the optical part for optimal protection on both sides of the polarizer.

Please replace the paragraph beginning on page 22, lines 12-22 and page 23, lines 1-3, with the following rewritten paragraph:

To form the optical polarized part illustrated in Fig. 4, liquid-phase polymeric material is introduced on both sides of the polarizer at step 32. The disclosed gaskets of United States ~~Application Serial No. 09/447,445~~ Patent No. 6,391,231 advantageously allow simultaneous introduction of material on both sides of the polarizer layer, thereby preventing displacement of the polarizer as the material quickly reacts and hardens. Such a method of controlled simultaneous introduction is preferred with this quickly solidifying material to avoid flow lines or voids against the polarizer layer that would degrade the optical performance. Similarly, the filling through-hole(s) of these gaskets may be specifically designed to admit equal or differential distribution of the material around the polarizer, as required to achieve equal or dissimilar thicknesses of polymeric material on the front and back surfaces of the polarized optical part. As in Fig. 3 , the through-holes also offer an important advantage in providing reservoirs of material to ensure fully filled parts even upon reactive shrinkage, and to allow passages for egress of gases.

Please replace the paragraph beginning on page 23, lines 19-21 and page 24, lines 1-2, with the following rewritten paragraph:

At step 30 "Admit liquid polymeric material behind polarizer to fill back of mold," the liquid polymeric material is introduced only behind the polarizer to press it against the front surface. Again, active or passive means to assist conformance of the polarizer to this surface may be included such as a gasket disclosed by United States ~~Application Serial No. 09/447,445~~ Patent No. 6,391,231.

Please replace the paragraph beginning on page 28, lines 3-10, with the following rewritten paragraph:

Example 2. This example is representative of the manufacturing method illustrated in Fig. 3. A thermoset mold cavity was assembled with the polarizer resting against the front mold surface. Using a sidefill gasket design as disclosed in United States ~~Application No. 09/447,445~~ Patent No. 6,391,231, wherein the gasket has vent holes in addition to a filling port, liquid-phase polyurethane-based material was admitted to only the region of the assembly behind the polarizer film. The lens was allowed to solidify at room temperature for a duration less than 10 minutes (until mixture gels). The lens was placed in an oven to continue its reactive cure at 12 1°C for 16 hours.

Please replace the paragraph beginning on page 28, lines 11-12 and page 29, lines 1-11, with the following rewritten paragraph:

Example 3. This example is representative of the manufacturing method illustrated in Fig. 4. A thermoset mold cavity was assembled with a polarizing layer using a sidefill gasket design as disclosed in U.S. Patent ~~Application Serial No. 09/447,445~~ No. 6,391,231. Specifically, a slot-shaped port hole acted as the fill port to introduce, in a controlled manner, the thermosetting resin material along the edge axis of the embedded layer. Two port holes functioning as vent holes were located above the edge axis of the embedded material, i.e., on the thinner side of the lens to allow egress of any gases from the front surface of the lens. An additional vent port was located below the edge axis of the embedded material on the thicker side of the lens to allow egress of any gases from the back lens surface. A curved fill nozzle designed to match the slot-shaped fill port was used to introduce material into the cavity around the polarizing layer until the cavity was full and a small amount of material flowed out of the egress holes. After standard curing as in Example 1, the gasket was removed.

Please replace the paragraph beginning on page 29, lines 14-19 and page 30, lines 1-3, with the following rewritten paragraph:

Example 4. This example is representative of the manufacturing method illustrated in Fig. 5. A thermoset mold cavity was assembled with the polarizer resting against the front mold surface. Using another sidefill gasket design as disclosed in U.S. Patent ~~Application Serial No. 09/447,445~~ No. 6,391,231, liquid-phase polymeric material was admitted to only the region of the assembly behind the polarizer film. This material was allowed to solidify for ten minutes, then the front mold surface was removed and another mold surface spaced 1 mm away from the polarizer film was placed in the assembly. Resin was then inserted into this newly formed front lens region to cover the front surface of the polarizer and assume the new front curvature of the lens cavity.

Listing of Claims:

Claims 1-12 (canceled)

Claim 13 (original): A method of manufacturing an optical-quality polarized part comprising:

forming a high impact polyurethane-based optical construct utilizing a sidefill gasket; and

bonding a polarizer to the construct.

Claim 14 (original): A method of manufacturing an optical-quality polarized part according to claim 13 wherein the optical construct is formed by placing liquid-phase polymeric material about one side of the polarizer.

Claim 15 (original): A method of manufacturing an optical-quality polarized part according to claim 13 wherein the optical construct is formed by placing liquid-phase polymeric material about each side of the polarizer.

Claim 16 (original): A method of manufacturing an optical-quality polarized part according to claim 15 wherein the liquid-phase polymeric material is placed simultaneously about each side of the polarizer.

Claim 17 (original): A method of manufacturing an optical-quality polarized part according to claim 13 wherein the polarizer is bonded to the optical construct after the optical construct has been formed.

Claim 18 (original): A method of manufacturing an optical-quality polarized part according to claim 13 wherein the polarizer comprises a polyethylene terephthalate film.

Claim 19 (original): A method of manufacturing an optical-quality polarized part according to claim 13 wherein the sidefill gasket has sidefill ports for admitting liquid-phase polymeric material via the sidefill ports onto at least one side of the polarizer.

Claim 20 (original): A method of manufacturing an optical-quality polarized part according to claim 13 wherein the optical construct is a lens formed with the polarizer at or near a front surface of the lens.

Claim 21 (original): A method of manufacturing an optical-quality polarized part according to claim 13 further comprising the step of treating the polarizer for integral bonding to the optical construct.

Claim 22 (original): A method of manufacturing an optical-quality polarized part according to claim 19 further comprising the step of treating the polarizer for integral bonding to the optical construct.

Claim 23 (original): A method of manufacturing a polarized lens comprising:

positioning a polarizer within a mold cavity;

admitting liquid-phase high impact polyurethane-based optical material into the mold cavity; and

forming a solid lens with the polarizer at or near a front surface of the lens, wherein the polarizer comprises a polyethylene terephthalate film.

Claim 24 (original): A method of manufacturing a polarized lens according to claim 23 wherein the polarizer is positioned within the mold cavity via a sidefill gasket.

Claim 25 (original): A method of manufacturing a polarized lens according to claim 23 further comprising treating the surface of the polarizer for applying a hard coating thereon and applying the hard coating to the film.

Claim 26 (original): A method of manufacturing a polarized lens according to claim 23 further comprising treating the surface of the polarizer for integral bonding to the lens.

Claim 27 (original): A method of manufacturing a polarized lens comprising:

positioning a polarizer within a mold cavity;

admitting liquid-phase high impact polyurethane-based optical material into the mold cavity; and

forming a solid lens with the polarizer at or near a front surface of the lens, wherein the polarizer comprises a wafer.

Claim 28 (original): A method of manufacturing a polarized lens according to claim 27 wherein the polarizer is positioned within the mold cavity via a sidefill gasket.

Claim 29 (original): A method of manufacturing a polarized lens according to claim 27 further comprising treating the surface of the polarizer for applying a hard coating thereon and applying the hard coating to the film.

Claim 30 (original): A method of manufacturing a polarized lens according to claim 27 further comprising treating the surface of the polarizer for integral bonding to the lens.

Remarks

This Preliminary Amendment amends the specification to correct a claim of priority and to correct a typographical error and another minor error. This Preliminary Amendment also updates several references to earlier patent applications that are incorporated by reference.

This application should now be in condition for a favorable examination.

Respectfully submitted,

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